exert therapeutic activity when administered to the body, wherein the camptothecin drug dissociates from the oligonucleotide within the body and exerts its therapeutic activities.

11.) The method claim 10, wherein the camptothecin drug is selected from a group consisting of camptothecin; 10-hydroxycamptothecin; topotecan; 9-aminocamptothecin; 9-nitrocamptothecin; 10-hydroxycamptothecin; 10,11-methylenedioxycamptothecin; 9-nitro-10,11-methylenedioxy-camptothecin; 9-chloro-10,11-methylenedioxycamptothecin; 9-amino-10,11-methylenedioxycamptothecin; 7-ethyl-10-hydroxycamptothecin (SN-38); DX-8951; GG211; 7-trimethylsilylmethylcamptothecin; and mixtures thereof.

12.) The method of claim 10, wherein the oligonucleotide is selected from the group consisting of single-stranded DNA, double-stranded DNA, antisense DNA, RNA, and catalytic RNA.

13.) The method of claim 10, wherein said camptothecin drug is noncovalently associated with the DNA and naturally dissociates in the body to release the active lactone form of the drug.

14.) The method of claim 10, wherein said camptothecin drug is covalently tethered to the oligonucleotide molecule and can be metabolically released from the oligonucleotide within the body.

15.) The method of claim 10, wherein said oligonucleotide-camptothecin drug complex is held within macromolecular assemblies of viral oligonucleotide vectors having a viral gene delivery system including retroviruses, adenoviruses, adeno-associated viruses, *Herpes* viruses, *Vaccinia* viruses, and other virus particles.

16.) The method of claim 10, wherein said oligonucleotide-camptothecin drug complex is held within macromolecular assemblies of non-viral oligonucleotide vectors having a non-viral gene delivery system including transfection vehicles, naked DNA for injection, gene gun particles, liposomes including cationic liposomes, virosomes, receptor-mediated delivery vehicles, and biodegradable and non-biodegradable polymer matrixes.

17.) The method of claim 10, further including lipid so as to form a lipid:oligonucleotide-camptothecin drug complex from a surfactant, lipid or mixture thereof, said lipid defining a compartment wherein said oligonucleotide-camptothecin drug complex exists and the camptothecin drug is held and protected from hydrolysis and is thus stabilized.

18.) A chemotherapeutic composition, comprising an oligonucleotide-camptothecin drug complex including a pharmaceutically effective amount of active lactone camptothecin drug that dissociates from the oligonucleotide within the body and exerts therapeutic activity.

19.) The chemical composition of claim 18, wherein the camptothecin drug is selected from a group consisting of camptothecin; 10-hydroxycamptothecin; topotecan; 9-aminocamptothecin; 9-nitrocamptothecin; 10-hydroxycamptothecin; 10,11-methylenedioxycamptothecin; 9-nitro-10,11-methylenedioxy-camptothecin; 9-chloro-10,11-methylenedioxycamptothecin; 9-amino-10,11-methylenedioxycamptothecin; 7-ethyl-10-hydroxycamptothecin (SN-38); DX-8951; GG211; 7-trimethylsilylmethylcamptothecin; and mixtures thereof.

20.) The composition of claim 18 wherein the oligonucleotide is selected from the group consisting of single-stranded DNA, double-stranded DNA, antisense DNA, RNA, and catalytic RNA.

21.) The composition of claim 18 wherein said camptothecin drug is noncovalently associated with the DNA and naturally dissociates in the body to release the active lactone form of the drug.

22.) The composition of claim 18 wherein said camptothecin drug is covalently tethered to the oligonucleotide molecule and can be metabolically released from the oligonucleotide within the body.

23.) The composition of claim 18 wherein said oligonucleotide-camptothecin drug complex is held within macromolecular assemblies of viral oligonucleotide vectors having a viral gene delivery system including

retroviruses, adenoviruses, adeno-associated viruses, *Herpes* viruses, *Vaccinia* viruses, and other virus particles.

24.) The composition of claim 18, wherein said oligonucleotide-camptothecin drug complex is held within macromolecular assemblies of non-viral oligonucleotide vectors having a non-viral gene delivery system including transfection vehicles, naked DNA for injection, gene gun particles, liposomes including cationic liposomes, virosomes, receptor-mediated delivery vehicles, and biodegradable and non-biodegradable polymer matrixes.

25.) The composition of claim 18 further including lipid so as to form a lipid:oligonucleotide-camptothecin drug complex from a surfactant, lipid or mixture thereof, said lipid defining a compartment wherein said oligonucleotide-camptothecin drug complex exists and the camptothecin drug is held and protected from hydrolysis and is thus stabilized.